

Components for use in plasma processing chambers having plasma exposed surfaces with surface roughness characteristics that promote polymer adhesion. The roughened surfaces are formed by plasma spraying a coating material such as a ceramic or high temperature polymer onto the surface of the component. The plasma sprayed components of the present invention can be used for plasma reactor components having surfaces exposed to the plasma during processing. Suitable components include chamber walls, chamber liners, baffle rings, gas distribution plates, plasma confinement rings, and liner supports. By improving polymer adhesion, the plasma sprayed component surfaces can reduce the levels of particle contamination in the process chamber thereby improving yields and reducing down-time required for cleaning and/or replacing chamber components.